Title: REAL-TIME CURRENTS AND WATER QUALITY MONITORING IN THE FLORIDA KEYS NATIONAL MARINE SANCTUARY

Principal Investigator: Elizabeth Johns
NOAA/AOML
Physical Oceanography Division
4301 Rickenbacker Causeway
Miami, FL 33149
305-361-4360
libby.johns@noaa.gov

Co-Investigator(s): Peter Ortner
National Oceanic and Atmospheric Administration
Atlantic Oceanographic and Meteorological Laboratory

James Hendee
National Oceanic and Atmospheric Administration
Atlantic Oceanographic and Meteorological Laboratory

Thomas Lee
Rosenstiel School of Marine and Atmospheric Science
University of Miami

Project Summary: Due to the strong linkage of Florida Keys National Marine Sanctuary (FKNMS) waters to local and remote waters and the proximity of large-scale oceanic currents, science-based decision making by resource managers depends on timely access to relevant information attained from monitoring these oceanographic connections.

Although a much improved understanding of transport processes and water quality variability within the South Florida coastal zone has developed over the past several years, critical gaps remain. To best protect and manage the unique natural resources of the FKNMS requires two additional components: a network of reliable real-time oceanographic observations in key locations, and a means of presenting these and other regional observations in a form and manner most easily applicable to resource management decisions.

This proposal seeks to maintain, upgrade and expand an existing network of real-time oceanographic observations in the Florida Keys National Marine Sanctuary (FKNMS). New observations will be integrated into the scientific context of historical and ongoing South Florida coastal research, and results of the scientific analysis and synthesis will be communicated to resource managers, researchers, educators, and the public via the project web site located within the NOAA/SFP home page (www.aoml.noaa.gov/sfp/). Emphasis will be

given to rapid dissemination of project data to the user community.

The operational objectives of the proposed continuation and expansion of the real-time network in the FKNMS are to:

1. Monitor in real-time the currents and water quality through the major passages of the Florida Keys;
2. Monitor in real-time the currents and water quality at the Looe Key mooring site located on the coral reef tract of the FKNMS;
3. Monitor in real-time the sea level and water quality at the CMAN/SEAKEYS station in the Dry Tortugas; and
4. Maintain and expand the project web site which presents real-time data and oceanographic data syntheses for South Florida coastal waters.

The underlying scientific goals of this proposed effort are:

1. Monitor and understand the circulation in and around the FKNMS on tidal to interannual time scales;
2. Monitor and understand the role of the Loop Current in long-term variations of Gulf to Atlantic flows;
3. Monitor and understand the causes of physical/chemical/biological 'event scale' variability;
4. Provide real-time circulation and water quality data to support and validate the NOAA regional model and the South Florida Water Management District (SFWMD) Florida Bay model, central to the interagency modeling plan for the Florida Bay/Florida Keys Feasibility Study (FBFKFS); and
5. Fulfill NOAA commitments to the Comprehensive Monitoring and Assessment Plan (MAP).

Relevance to Restoration and/or Resource Management	This proposal addresses both resource management needs of the FKNMS (e.g., circulation as it relates to larval pathways, distribution and abundance patterns) and scientific needs of the Comprehensive Everglades Restoration Plan (CERP) (e.g., the Florida Bay/Florida Keys Feasibility Study hydrodynamic and water quality models).
Geographic Area:	Florida Keys National Marine Sanctuary.